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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,743	02/25/2004	Douglas W. Akers	B-200	6111

7590 05/10/2005

Alan D. Kirsch  
BBWI  
PO BOX 1625  
IDAHO FALLS, ID 83415-3899

EXAMINER
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PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/788,743

Applicant(s)

AKERS, DOUGLAS W.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 11,20 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10,12-19 and 21-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/25/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's 3/14/05 election without traverse of Group A and species C, with claims 1-10, 12-19, and 21-23 readable thereon is acknowledged.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10, 12-19, and 21-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claims recite the limitation, "collecting positron annihilation data by detecting with the detector at least one emitted annihilation gamma ray..." Underlining provided. There is neither an adequate description nor enabling disclosure as to how and in what manner positron annihilation data can be collected by detection of only one annihilation gamma ray. It is a notorious scientific fact that statistically meaningful data requires collection of information from more than one event or nuclear interaction.

For processing the collected positron annihilation data in claims 1 and 21, the specification refers to the Doppler broadening algorithm shown as element 40 in Fig. 2. As presently set forth, this algorithm is essentially a "black box" with no description of the internals thereof. The disclosure is insufficient in failing to set forth in an adequate and sufficient fashion, a description of this algorithm that would enable it to perform its intended function. If the applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of this application) of the internals of this black box, copies of said literature, etc. must be submitted for appropriate review by the Office. See In re Ghiron et al., 169 USPQ 723, 727.

The Applicant states in his specification that the Doppler broadening algorithm 40 may comprise the Doppler broadening algorithm allegedly described in U.S. patent 6,178,218 B1 (see paragraph 0048 of the Specification). The Examiner reviewed said patent and found no mention of such Doppler broadening algorithm. In fact, the patent does not even use the term "algorithm" at all.

The Applicant further alleges that several different types of Doppler broadening techniques and algorithms have been developed and are being used in the positron annihilation art. There is neither an adequate description nor enabling disclosure as to how and in what manner: a) one selects the algorithm to use; and b) what, if any modifications have to be done to adapt the selected algorithm to Applicant's situation, e.g., how must the constants that are inherently part of any algorithm be evaluated. It is not readily apparent from the disclosure how these should be done.

For calculating the positron lifetime data from the positron annihilation data and the prompt gamma ray data in claim 2, the specification refers to a positron lifetime algorithm 38, as shown in Fig. 2 (see paragraph 0042). As presently set forth, this algorithm is essentially a "black box" with no description of the internals thereof. The disclosure is insufficient in failing to set forth in an adequate and sufficient fashion, a description of this algorithm that would enable it to perform its intended function. If the applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of this application) of the internals of this black box, copies of said literature, etc. must be submitted for appropriate review by the Office. See *In re Ghiron et al.*, 169 USPQ 723, 727.

The Applicant alleges that algorithms for determining positron lifetime have been developed and are being used in the positron annihilation art. There is neither an adequate description not enabling disclosure as to how and in what manner: a) one selects the positron lifetime algorithm to use; and b) what, if any modifications have to be done to adapt the selected algorithm to Applicant's situation, e.g., how must the constants that are inherently part of any algorithm be evaluated. It is not readily apparent from the disclosure how these should be done.

Applicant claims that positron lifetime is calculated from the positron annihilation data and the prompt gamma ray data. There is neither an adequate description nor enabling disclosure as to, for example, how to combine the two sets of data and what weight to assign to each set in the combination. It is not readily apparent from the disclosure how these should be done.

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3. Claims 1-10, 12-19, and 21-23 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for collecting positron annihilation data by detecting a plurality of emitted annihilation gamma rays, does not reasonably provide enablement for a collecting said data by detecting just one annihilation gamma ray. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make/use the invention commensurate in scope with these claims.

4. Claims 1-10, 12-19, and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are misdescriptive and inaccurate because they are contrary to the specification that discloses a plurality of detected annihilation gamma rays for collection positron annihilation data. See sections 2 and 3 above. Thus, the metes and bounds of the claims cannot be determined.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 571-272-6880. The examiner can normally be reached on 6:30-5:00, Mon-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJP  
April 5, 2005

A handwritten signature in black ink, appearing to read "R. Palabich". The signature is written in a cursive, flowing style.